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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,525	09/26/2003	Hajime Aga	AGA=6B	6498

7590 03/29/2006

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EXAMINER

CRANE, LAWRENCE E

ART UNIT	PAPER NUMBER
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1623

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/670,525	Applicant(s) AGA ET AL.	
	Examiner L. E. Crane	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/26/2003, 5/17/2004 & 11/22/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/034,336.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/26/03, 5&11/04</u> | 6) <input type="checkbox"/> Other: _____ |

The Abstract of the Disclosure is objected to because it does not meet the requirement of the MPEP for US application. Correction is required. See MPEP 608.01(b).

The abstract is a single run-on sentence. Appropriate correction is respectfully requested.

No claims have been cancelled, no claims have been amended, the disclosure has not been amended, and no new claims have been added as of the date of this Office action. Three Information Disclosure Statements (3 IDSs) filed September 26, 2003, May 17, 2004 and November 22, 2004 have been received with all cited references and made of record except as noted by amendments to the noted forms.

Claims 1-8 remain in the case.

Note to applicant: when a rejection refers to a claim X at line y, the line number "y" is determined from the claim as previously submitted by applicant in the most recent response including lines deleted by line through.

The disclosure is objected to because of the following informalities:

The instant disclosure includes a "Cross-References to Related Applications." See 37 C.F.R. §1.78 and MPEP at §201.11. Applicant is respectfully requested to update the noted information in the first paragraph of the disclosure in re the status of the parent application.

Appropriate correction is required.

Claims 1-8 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is incomplete because the ratio of dry weights at the end of the claim refers back to trehalose and apparently to another food(s) or foodstuff(s) the identity or identities of which has(have) not been defined in the earlier portion of the claim. Defining the substance by implying that the undefined substance contains "alpha-glucosyl hesperidin" and/or "catechin" is insufficient.

In claim 1 the term “inhibiting the decrease of active-oxygen-eliminating activity of at last one member selected from the group consisting of alpha-glucosyl hesperidin and catechin” appears to be internally inconsistent because the named substances are defined by applicant at page 8, first full paragraph, first sentence, as a “plant pigment” and as a “plant polyphenol,” respectively, not as an enzyme. Examiner assumes that “inhibition” of one or more source of enzymatic “activity” is required to effect the preamble requirement of “inhibiting the decrease of active-oxygen-eliminating activity.” Since neither of the named substances is an enzyme by applicant’s own admission, then the claim appears to be either incomplete or misleading. Appropriate clarification of the claimed subject matter is respectfully requested. See also claim 4 for a similar problem in need of similar clarification.

In claim 1 at lines 4-6, at present the noted lines are unclear because they appear to include the active ingredient, “trehalose,” within the Markush group of “alpha-glucosyl hesperidin and catechin trehalose.” Clarification is respectfully requested.

In claim 6 at line 2, the term “a liquid or suspension” is incomplete. Did applicant intend the term to read -- a liquid solution or a suspension --?

Claim 8 is identical to claim 3. Applicant is respectfully requested to delete one of the noted claims. Alternatively, did applicant intend dependence of claim 8 to be from claim 4?

The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

“A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.”

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.”

(e) the invention was described in

(1) an application for patent described under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application filed under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).”

Claims 1-8 are rejected under 35 U.S.C. §102(b) as being anticipated by **Mandai et al. ‘513** (PTO-1449 ref. AC).

Applicant is referred to claims 2-4 of the ‘513 reference wherein the dehydration of food materials by contacting same with trehalose is disclosed. This same process is being in effect claimed herein because the effect described in instant claims 1 and 4, apparently “inhibition of food oxidation following trehalose treatment,” is deemed to have also been inherently included within the scope of the previously patented subject matter. Applicant is requested to note that the ‘513 reference at column 1, lines 36 and 63 refers to the “maillard reaction,” a process which is apparently responsible for the browning or spoilage of foods which occurs in the presence of reducing sugars; see also column 1 at lines 35-40. And in the same prior art document reference to “hydrolysis, souring and browning” at column 3, lines 55-56, is a disclosure that supports the conclusion that the trehalose-treatment of foods, including application of the ‘513 method, would have been expected, based on well known in the art experience, to be associated with both safe dehydration and with inhibition of oxidation, aka “browning.” And at column 3, lines 34-35, applicant is requested to note that application of the ‘513 trehalose treatment requires “no heat treatment such as heat drying” and therefore is applicable in both non-heating and heating situations, thereby meeting the limitations of instant claims 2 and 5. And lastly, in the absence of a showing that the limitation “20 w/w % on a dry basis” is a critical limitation, the instant specified ratio of foodstuff and trehalose is deemed to have been anticipated by the ratio limitation range found at line 2 in claim 2 of the ‘513 reference.

In addition claims 1-6 of the **Quadrant Bio. ‘887** (PTO-892 ref. L) are also deemed to anticipate the instant claimed subject matter for similar reasons.

And claims 5-9 of the **Kabushiki ‘730** reference (PTO-892 ref. M) are also deemed to anticipate the instant claimed subject matter for similar reasons.

The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

“A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.”

Claims 1-8 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Mandai et al. '513** (PTO-1449 ref. AC) in view of **Cardona '309** (PTO-1449 ref. AF) and **Quadrant Bio. '887** (PTO-892 ref. L).

The instant claims are directed to a method of food preservation wherein spoilage including “browning,” “hydrolysis” or “souring” normally caused by the interaction of the raw food with oxygen in the presence of a reducing sugar or an oligosaccharide with a terminal reducing sugar moiety is prevented by contacting said food with 20 w/w % trehalose on a dry basis with optional heating and/or sterilization. Optionally the trehalose may be in either an amorphous or a crystalline hydrous form. The claims also specify what are apparently two cofactors involved in the spoilage reactions being inhibited, “alpha-glucosyl hesperidin” and “catechin.”

Mandai et al. '513 discloses all of the elements of the claimed invention either specifically or generically as noted in the previous grounds of rejection.

Mandai et al. '513 does not expressly disclose the specific ratio of trehalose found at the end of instant claims 1 and 4 (“20 w/w% on a dry basis”) or what are apparently cofactors which produce the “browning” and other indicia of spoilage in the enzymatic oxidation being inhibited; “alpha-glycosyl hesperidin” and “catechin.”

Cardona '309 (PTO-1449 ref. AF) discloses at page 3, part II, lines 3-5, that the auto-oxidation of catecholamines in foods is inhibited by treatment with the non-reducing sugar trehalose.

Quadrant Bio '887 (PTO-892 ref. L) discloses at page 2, column 2, line 49 a weight ratio of trehalose to food of 20 w/w%, a number within the range also found at lines 57-58 in the same column. Also claims 1-6 at pages 4-5 of this reference are directed to a method which appears to render the instant claimed method at least obvious in light of the disclosure of this reference.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the primary reference disclosure with those of the secondary references because all three references are directed to the treatment of foods with trehalose for the purpose of increasing both the shelf life of the food and the quality of the food following rehydration of the trehalose-preserved food.

One having ordinary skill in the art would have been motivated to combine these references because the processes disclosed in each reference are each directed to a similar overall goal, namely the improvement of trehalose treatments of foods for the purpose of extending the lifetime of the food's freshness, taste, and nutrition. Each reference has provided information in supplement of the others to improve the understanding of both how to preserve foods and an improved understanding of the chemical and biochemical nature of food spoilage being inhibited by the action of trehalose.

Therefore, the instant claimed method of food oxidation inhibition following trehalose treatment would have been obvious to one of ordinary skill in the art having the above cited reference before him at the time the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. §103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. §1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. §103(c) and potential 35 U.S.C. §§102(f) or (g) prior art under 35 U.S.C. §103(a).

Papers related to this application may be submitted to Group 1600 via facsimile transmission (FAX). The transmission of such papers must conform with the notice published in the Official Gazette (1096 OG 30, November 15, 1989). The telephone number to FAX (unofficially) directly to Examiner's computer is 571-273-0651. The telephone number for sending an Official FAX to the PTO is 571-273-8300.

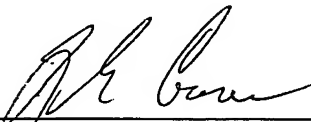
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner L. E. Crane whose telephone number is 571-272-

0651. The examiner can normally be reached between 9:30 AM and 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. S. Anna Jiang, can be reached at **571-272-0627**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is **571-272-1600**.

LECrane:lec
03/08/2006



L. E. Crane, Ph.D., Esq.
Patent Examiner
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